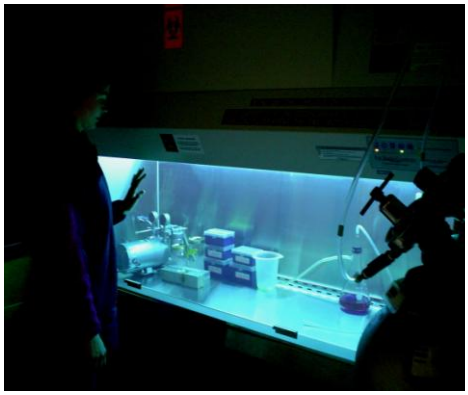
Montana Laboratory Sentinel

Updates from the MT Laboratory Services Bureau | MONTANA Department of Public Health & Human Services | http://healthlab.hhs.mt.gov/ | 07/08/10



Biosafety Cabinet (BSC) Safety Part 1 of 2

There are several factors to consider when purchasing and installing a biosafety cabinet in your laboratory. The type of cabinet selected as well as its location can have a major impact on its effectiveness. However, coupled with the appropriate personal protective equipment and personnel training, biosafety cabinets are a very effective barrier against aerosols and other agents that may cause harm.

The first thing to consider before installing a BSC is the type needed for the tasks at hand. Class I BSCs are similar to chemical fume hoods except they have a HEPA filter. This type of cabinet protects the worker and the environment but not the product. Class II BSCs protect the worker, the product, and the environment. They provide a "sterile" work area and may be used for work with aerosol-transmissible micro-organisms and for tissue culture/ virology. Class II BSCs can be further classified into different types, depending on their intended use. Class III BSCs are the most contained cabinets and are suitable for work with BSL 3 and 4 agents. They are totally enclosed, ventilated, and air-tight. Class II and III BSCs also include HEPA filtered vents.

When placing a BSC, it is important to remember that location does matter. The cabinet should be Isolated from other work areas and should not be located in high traffic areas. It should be given a clearance of at least 12-14 inches and should be away from laboratory entry doors, windows, and airflow ducts. This is very important because the inward directional airflow at the face of the cabinet (which protects the worker) is easily interrupted. Opening and closing doors or walking parallel to the BSC while it is in use can allow aerosols to escape from within the cabinet.

Manufacturers are moving away from installing ultraviolet (UV) lights in BSCs because they tend to give people a false sense of security. In order for the UV light to be effective, several factors should be considered. Intensity decreases with distance from the lamp as well as dirt and dust that may accumulate on the lamp. Remember that UV intensity decreases over time, and the lamp must be properly maintained in order to render contaminated items sterile. Measure wavelength on an annual basis to check that emission is within effective range. Other important points to remember when using UV lights:

- Do not work in BSC when UV light is on
- UV light will reflect off cabinet surfaces to outside of cabinet
- BSC sash should be fully closed and the blower turned off if UV light is on
- Do not work within 6-10 feet of cabinet when UV light is on if sash is not fully closed
- Unprotected exposure to UV light can cause serious damage to eyes (ultraviolet keratosis) and skin (erythema, aka sunburn)
- Surfaces must be directly bathed in UV light to be effectively disinfected—30 minutes is sufficient
- UV light is not more effective the longer it is on
- UV has limited penetrating power - surface or air only
- Do not rely on UV light as primary means of disinfection
- Many organisms have repair mechanisms for UV damage and cannot be effectively inactivated

If you have questions about the selection or safe use of a BSC, refer to the Biosafety in Microbiological and Biomedical Laboratories (BMBL) Manual, 5th Edition, available from CDC. A PDF version of this document is available at http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf

Bioterrorism Preparedness Training for LRN Sentinel Laboratories

July 30 in Helena

Registration is open for the ***BT Wet Workshop - July 30, 2010 - Helena MT.*** One-day presentation and laboratory observation of *Bacillus anthracis, Brucella spp., Yersinia pestis, Francisella tularensis, Burkholderia* spp., and other agents. Laboratory Response Network protocols, Biosafety, & other emergency preparedness issues will be discussed. Visit www.nltn.org/127-10.htm to register. Limit: 20 microbiologists. Questions? Email Kathy Martinka at kmartinka@mt.gov

MT Communicable Disease Update Week 25 (Ending 6/26/10)

This newsletter is produced by the Montana Communicable Disease Epidemiology Program.
Questions regarding its content should be directed to 406.444.0273 (24/7/365).
http://cdepi.hhs.mt.gov

DISEASE INFORMATION

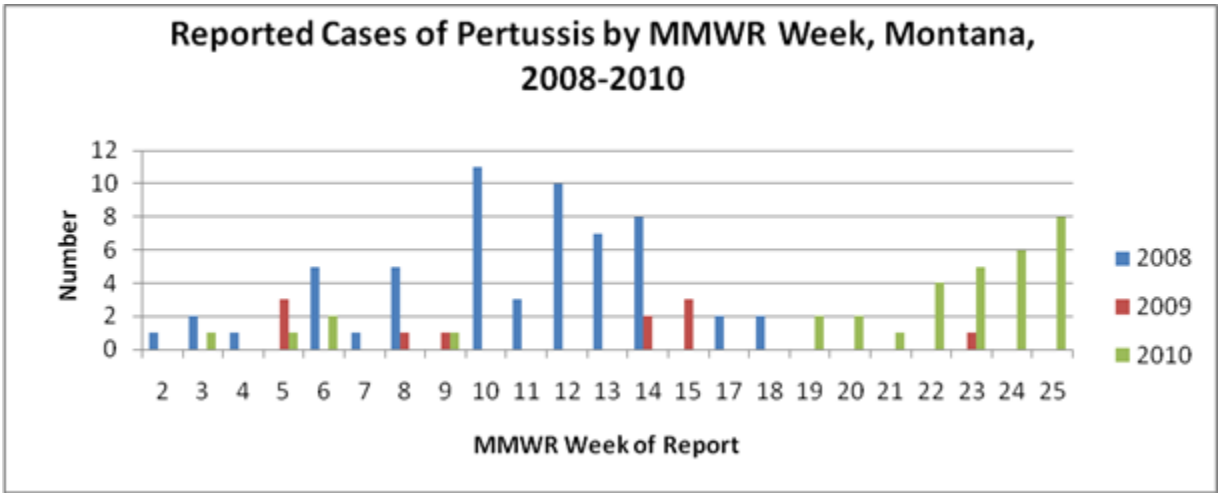
Summary – Week 25 - Ending 6/26/10 – Disease reports received at DPHHS during the reporting period June 20-26, 2010 included the following:

- Vaccine Preventable Diseases: Pertussis (8), invasive *Streptococcus pneumoniae* (2), Varicella (4)
- Enteric Diseases: Campylobacteriosis (3), *E. coli* 0157 (2), Salmonellosis (3), Yersiniosis (1)
- Other Conditions: Aseptic meningitis (1), Legionellosis (1), Viral meningitis (1)
- Travel Related Conditions: None

NOTE: The report has multiple pages reflecting the following information: (1) vaccine preventable and enteric diseases YTD; (2) other communicable diseases YTD; (3) cases just this week; (4) clusters and outbreaks; and (5) an STD summary.

THE "BUZZ"

Pertussis – California has declared an outbreak of pertussis in their state, with a 4-fold increase in cases compared to the same time period in 2009. http://www.calhospitalprepare.org/sites/epbackup.org/files/resources/Pertussis_CDPH_6.23.10.pdf Although there is no outbreak in Montana, we are seeing an increased number of cases. There have been 33 reported cases of pertussis in 2010 to date, 26 occurring since mid-May. Please remind providers to "think pertussis" and do PCR testing for this condition in patients. Recent cases have occurred in Gallatin, Hill, Lewis & Clark, Rosebud (cluster) and Yellowstone counties.



Vaccinate for pertussis - both children and adults! Talking points about pertussis are attached. More information: *http://www.cdc.gov/Features/Pertussis/*

Rocky Mountain Spotted Fever Increase - Between June 13 and 17 there have been four reports of Rocky Mountain spotted fever (RMSF) illness, three in MT residents and one in a traveler. RMSF is an acute tick-borne illness caused by the bacterium *Rickettsia rickettsii*. People who become ill with RMSF do not always recall being bitten by a tick. Symptoms associated with RMSF include fever, headache, fatigue, muscle aches, vomiting, nausea, and loss of appetite. A rash may appear 3 – 5 days after fever onset and is present in up to 90% of pediatric cases, and up to 60% of adult cases. Infection with *R. rickettsii* can cause severe illness and appropriate antibiotic treatment should be initiated IMMEDIATELY when RMSF is suspected on the basis of clinical and epidemiologic findings. A recent HAN outlined recommendations for clinicians if they suspect RMSF:

- Send an acute serum sample to a reference laboratory or to the Montana Department of Public Health Laboratory for a tick–borne disease serology panel
- Follow-up with a convalescent serum sample 2 – 4 weeks post – illness onset to confirm a four – fold rise in IgG antibody titer
- Do not delay treatment while awaiting lab test results. Doxycycline is the drug of choice for treatment in children and adults. http://www.cdc.gov/ticks/treatment.html
- Collect exposure history from patient including a geographic location where a tick bite may have occurred
- Report all suspected and confirmed cases of RMSF to your local health department

More information about RMSF is available on the web at:
http://www.cdc.gov/ticks/diseases/rocky_mountain_spotted_fever/index.html
http://www.dphhs.mt.gov/PHSD/epidemiology/documents/SS_RMSF_May2010.pdf

WHAT'S NEW ON THE CDEPI WEB SITE?

- **Bats and Summer Camps in Montana** – This resource assists camp directors and local health departments with bat exclusion and control in summer camp situations. http://www.dphhs.mt.gov/PHSD/epidemiology/cdepi-rabies.shtml
- **Surveillance Snapshot on Rocky Mountain Spotted Fever** http://www.dphhs.mt.gov/PHSD/epidemiology/SurveillanceSnapshots.shtml

INFORMATION / ANNOUNCEMENTS

NEW! Stay Away From Bats PSAs – Public Safety Announcements warning children to stay away from bats will begin airing on Montana television and radio stations the week of July 4. This campaign is part of a three year program to educate the public and providers about the prevention of potential rabies exposures. The PSA and materials for camp directors and local health departments can be found at: http://www.dphhs.mt.gov/PHSD/epidemiology/cdepi-rabies.shtml.

NEW! West Nile Virus - It's not too early to be thinking about WNV in Montana. Due to the recent wet weather, now may be the time to start reminding people about the importance of mosquito control measures and WNV prevention. If you'd like "Fight the Bite" posters or brochures contact us at (406) 444-0273. CDC WNV educational materials are available at http://www.cdc.gov/ncidod/dvbid/westnile/prevention_info.htm.

NEW! Healthy Swimming – The weather is getting warmer and more people will be swimming in Montana.
Follow these six steps for healthy swimming:

- Don't swim when you have diarrhea.
- Don't swallow pool water.
- Practice good hygiene. Shower with soap before swimming and wash your hands after using the toilet or changing diapers. Germs on your body end up in the water.
- Take your kids on bathroom breaks or check diapers often.
- Change diapers in a bathroom or a diaper-changing area and not at poolside.
- Wash your children thoroughly (especially the rear end) with soap and water before they go swimming.

Information about healthy swimming and recreational water illness: http://www.cdc.gov/healthywater/swimming/

The ABCs of Hepatitis – This helpful fact sheet from the CDC for professionals has been updated.
http://www.cdc.gov/hepatitis/Resources/Professionals/PDFs/ABCTable.pdf (color)
http://www.cdc.gov/hepatitis/Resources/Professionals/PDFs/ABCTable_BW.pdf (black & white)

One Needle, One Syringe, Only One Time – This campaign led by CDC and the Safe Injection Practices Coalition (SIPC) is intended to raise awareness among patients and healthcare providers about safe injection practices and to eradicate outbreaks resulting from unsafe practices. Since 1999, more than 125,000 patients in the United States have been notified of potential exposure to hepatitis B virus, hepatitis C virus, and HIV due to lapses in basic infection control practices. For more info, visit: http://www.oneandonlycampaign.org.